

WHAT IS CLAIMED IS:

1. A plasma display panel, comprising:

a first substrate and a second substrate that are substantially parallel and have a predetermined gap therebetween;

5 a plurality of address electrodes formed on a surface of the first substrate opposing the second substrate, the address electrodes being provided in a line pattern and being substantially parallel with each other;

a dielectric layer formed over a surface of the first substrate covering the address electrodes;

10 barrier ribs formed on the dielectric layer in a lattice pattern, the barrier ribs defining discharge cells;

a plurality of discharge sustain electrodes formed on a surface of the second substrate which opposes the first substrate, the discharge sustain electrodes being formed in a line pattern in a direction substantially perpendicular to the address electrodes; and

15 a transparent dielectric layer and a protection layer formed over the surface of the second substrate covering the discharge sustain electrodes,

wherein the barrier ribs include first barrier rib members formed along a same direction as the address electrodes, and second barrier rib members formed along a same direction as the discharge sustain electrodes, and wherein at least one of the first barrier rib members and the
20 second barrier rib members is made of a non-transparent material.

2. The plasma display panel of claim 1, wherein the non-transparent material is a black pigment selected from the group consisting of chrome oxide, copper oxide, PbO, and Al₂O₃.

3. The plasma display panel of claim 1, wherein the first barrier rib members and the

second barrier rib members have different heights.

4. The plasma display panel of claim 3, wherein a height of the first barrier rib members is greater than a height of the second barrier rib members, such that at least adjacent discharge cells may communicate via a space at an end of the second barrier rib members.

5 5. The plasma display panel of claim 3, wherein a height of the first barrier rib members is less than a height of the second barrier rib members, such that at least adjacent discharge cells may communicate via a space at an end of the first barrier rib members.

6. The plasma display panel of claim 3, wherein the first barrier rib members are arranged substantially in parallel with and at locations between the address electrodes, and the
10 second barrier rib members are arranged substantially in parallel with and at locations between the discharge sustain electrodes.

7. The plasma display panel of claim 1, wherein the first barrier rib members and the second barrier rib members are made of a non-transparent material.

8. A plasma display panel, comprising:
15 a first substrate and a second substrate that are substantially parallel and have a predetermined gap therebetween;

a plurality of address electrodes formed on a surface of the first substrate opposing the second substrate, the address electrodes being provided in a line pattern and substantially in parallel with each other;

20 a dielectric layer formed over a surface of the first substrate covering the address electrodes;

barrier ribs formed on the dielectric layer in a lattice pattern, the barrier ribs defining discharge cells;

a plurality of discharge sustain electrodes formed on a surface of the second substrate which opposes the first substrate, the discharge sustain electrodes being formed in a line pattern in a direction substantially perpendicular to the address electrodes; and

a transparent dielectric layer and a protection layer formed over the surface of the second substrate covering the discharge sustain electrodes,

wherein the barrier ribs include a plurality of first barrier rib members formed in a stripe pattern perpendicular to a direction of the address electrodes, and a plurality of second barrier rib members formed within a space between two neighboring first barrier rib members, the barrier rib members defining the discharge cells to be arranged in a zigzag manner along a same direction as the address electrodes, and

wherein at least one of the first barrier rib members and the second barrier rib members is made of a non-transparent material.

9. The plasma display panel of claim 8, wherein to establish the zigzag arrangement of the discharge cells, the discharge cells are arranged in the zigzag manner by arranging the second barrier rib members defining the discharge cells in a first space defined by a first pair of neighboring first rib members such that they are not aligned with the second barrier rib members defining the discharge cells located in a second space defined by a second pair of neighboring first rib members, wherein one rib member of the first pair of neighboring first rib members is also one of the first rib members in the second pair of neighboring first rib members.

10. The plasma display panel of claim 8, wherein to establish the zigzag arrangement of the discharge cells, a first set of the barrier rib members is formed on a first set of the address electrodes and a second set of the barrier rib members is formed on a second set of the address electrodes, wherein the second set of address electrodes includes at least one of the address

address electrodes which is not part of the first set of address electrodes.

11. The plasma display panel of claim 8, wherein both of the first barrier rib members and the second barrier rib members is made of a non-transparent material.

12. The plasma display panel of claim 8, wherein a height of the first barrier rib members is greater than a height of the second barrier rib members, such that at least adjacent discharge cells may communicate via a space at an end of the second barrier rib members.

13. The plasma display panel of claim 8, wherein a height of the first barrier rib members is less than a height of the second barrier rib members, such that at least adjacent discharge cells may communicate via a space at an end of the first barrier rib members.

14. A method for manufacturing barrier ribs for a plasma display panel, comprising:
preparing a first substrate having address electrodes and a dielectric layer formed thereon, and printing a first insulating paste over a surface of the dielectric layer and forming a lower barrier rib member of a first predetermined height;

printing a second insulating paste on the lower barrier rib member in a line pattern, and forming upper barrier rib members having a second predetermined height from a surface of the dielectric layer;

coating a dry film resistor over a surface of the first substrate, fully covering the lower barrier rib member and the upper barrier rib members;

positioning a photo mask, which has a lattice-shaped light passage pattern, over an entire surface of the dry film resist, then performing exposure through the light passage pattern to pattern the dry film resist such that the dry film resist covers all of the upper barrier rib members and part of the lower barrier rib member; and

spraying sand at a high speed onto the surface of the first substrate such that exposed

portions of the lower barrier rib member are removed, after which the dry film resist remaining on the first substrate is removed,

wherein either or both the first insulating layer paste and the second insulating layer paste are made of non-transparent material.

5 15. The method of claim 14, wherein the non-transparent material is a mixture of glass paste and a black pigment selected from the group consisting of chrome oxide, copper oxide, PbO, and Al₂O₃.

16. The method of claim 14, wherein both the first insulating layer paste and the second insulating layer paste are made of a non-transparent material.